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OF COMETS AND ASTEROIDS Final
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Final Technical Report

Observations of Comets and Asteroids

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This grant covered a program of scientific research using the IUE satellite from 1984 into 1993. During that period the scientific goals changed considerably as we improved our understanding of comets during the period. During the period of the grant we used IUE to obtain spectra of roughly two dozen comets and two asteroids. Many of these were observed as targets of opportunity, shortly after their discovery, while the others were periodic comets for which specific observations were proposed in advance.

The primary product of this research is scientific papers and we have published a steady stream of papers as we proceeded with the research. A list of papers in the public, refereed, scientific literature is appended and these should be consulted for details of the results. These papers include some results based on observations made under a preceding grant. In addition, we also observed some comets for which the results were published subsequent to the expiration of the grant.

Highlights of the results include:

- Detection of OH emission in the vicinity of the asteroid Ceres
- The variability of comets P/Halley and Levy 1990c
- The high ejection velocities from comet P/Encke
- The discovery of sudden outbursts in Halley distinct from the periodic variations.
- The determination of upper limits on several species implying strong constraints on the formation mechanism of S_2 (discovered under the preceding grant)

Reprints of the most of the relevant papers are included with the archival copy of this report.

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